material for forming said head base on a surface of said green sheet having said relief pattern; stripping off said head base from said green sheet; and forming the nozzle port for discharging the ink on said head base.

REMARKS

Claims 1-33 are pending. Claim 1 has been amended to add a step of forming the head base by coating and solidifying a material for forming the head base on a surface of the green sheet having the relief pattern. This feature is already present in claim 18, and therefore does not raise any new issues. Claims 5, 11-13, 15-17, 21, 27-29 and 31-33 have been withdrawn from further consideration as a result of the restriction requirement issued in this application. Applicants reserve to present these claims in a divisional application at the appropriate time.

In response to the Examiner's approval of applicants' proposed drawing correction, attached are formal drawing sheets for Figs. 11 and 12 amended to contain the designation "Prior Art".

Turning now to the art rejections, the orifice or nozzle plate of JP '141 has a base plate comprised of a non-conductive pattern formed on a conductive Ni substrate. After a releasable film is formed on the surface of the base plate containing the non-conductive pattern, an electroforming Ni film is precipitated on the releasable film and released from the base plate to produce the orifice plate. JP '141 does not disclose a head base formed as recited in independent claim 18. Applicants' maintain that claim 18 is an apparatus claim directed to an ink jet printer head, which contains a processing language regarding the manner in which the head base element is formed. As such, this language must be considered in determining patentability.

In addition, there is a significant difference between the final structure of the ink jet head shown in Fig. 1 of JP '141 and the structure of the head base that has been stripped off from a green sheet, according to independent claim 18. As recited in claim 18, the head base comprises a concave portion defining ink pressure chambers and a plate in which corresponding nozzle plates are formed, while the green sheet has a relief pattern corresponding to the concave portion. Fig. 1(f) of JP '141 only shows the nozzle plate. But, according to the present

invention, the stripping off of the h ad base from the green sheet yields not only the nozzle plate but also the concave portion that corresponds to the ink pressure chamber.

Accordingly, it is respectfully submitted that claims 18-20, 22, 23, 26 and 30 are patentably distinguishable over JP '141.

Trueba, as previously noted, is directed to making a mandrel structure for forming thin film components. In Trueba, the final structure is a nozzle plate, which is finally formed by peeling off work piece 217, as shown in Fig. 2L. Trueba's nozzle plate has no concave portion defining one or more ink pressure chambers, as recited in each of independent claims 1 and 18. Also, Fig. 2 of Trueba does not illustrate the forming of a head base by coating and solidifying a material for forming the head base on a surface of a green sheet having the relief pattern, nor the stripping off of the head base from the green sheet to yield a nozzle plate and the concave portion that defines the ink pressure chamber(s). JP 6-122203 (JP '203), which is directed to a nozzle plate forming process, does not overcome these deficiencies in Trueba. In JP '203 a photoresist is selectively applied to a plate, a copper layer is applied to those regions of the plate where the photoresist was not applied, the photoresist is removed, and those areas where the photoresist were removed are irradiated to form nozzle holes 50. However, there is no teaching of forming a head base by coating and solidifying a material for forming the head base on a surface of a green sheet having the relief pattern, nor of stripping off the head base from the green sheet to yield a nozzle plate and the concave portion that defines the ink pressure chamber(s).

Accordingly, it is respectfully submitted that claims 1-4, 6, 7, 14, 18-20, 22, 23 and 30 are patentably distinguishable over the combination of Trueba and JP '203.

The additional references, Moynihan and Sachdev, applied together with the base combination of Trueba and JP '203, to reject claims 8, 9, 24 and 25, and claims 10 and 26, respectively, do not offset the shortcomings of the primary references, as applied to independent claims 1 and 18. Since each of these claims is directly or indirectly dependent on either claim 1 or 18, it is submitted that these claims are also allowable.

In view of the foregoing, entry of this Amendment After Final Rejection, as an earnest attempt to advance prosecution and reduce the number of issues, is respectfully requested.

Should the Examiner believe that issues remain outstanding, he is respectfully requested to contact applicants' undersigned attorney in an effort to resolve such issues and advance the case to issue.

Respectfully submitted,
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Date: July 5, 2002

VERSION WITH MARKINGS TO SHOW CHANGES MADE

1. (Thrice Amended) A method of manufacturing an ink jet printer head having a head base, comprising the steps of:

manufacturing a green sheet having a prescribed relief pattern in response to said head base, said head base comprising a plate in which a nozzle port is formed and a concave portion defining an ink pressure chamber, said green sheet having a relief pattern in response to the concave portion defining said ink pressure chamber; forming said head base by coating and solidifying a material for forming said head base on a surface of said green sheet having said relief pattern; stripping off said head base from said green sheet; and forming the nozzle port for discharging the ink on said head base.